WORKING DRAFT

*Whitefish Urban Corridor Study of US Highway 93*
*Technical Memorandum – Task 21*

# Preliminary Conceptual Design and Improvement Options for the Corridor

*Prepared For:*

**City of Whitefish**
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# TECHNICAL MEMORANDUM – TASK 21
# Preliminary Conceptual Design and Improvement Options for the Corridor

This technical memorandum outlines the design and improvement options initially considered for the US 93 corridor through Whitefish. The alternatives identified in this memo will be subject to a screening process based on the goals and objectives for the corridor to ultimately help determine which ones merit further detailed study. The conceptual design and improvement options for the US 93 corridor generally include:

- Alternatives for the Whitefish urban area described in the US Highway 93 Somers to Whitefish Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) whether they were advanced for detailed evaluation or not;
- Design options developed after the ROD during project development activities for the Montana Department of Transportation's Whitefish Urban reconstruction project;
- Recommendations for US 93 from the Whitefish Downtown Business District Master Plan; and
- Other strategies that may potentially help relieve congestion and reduce future travel demands in the corridor.

It is important to recognize that the availability of funding is key to MDT's ability to implement improvements to US 93. The work undertaken for the corridor study will not only identify desirable improvements but will also help screen out improvements that are not feasible from a funding perspective.

## PURPOSE AND NEED HELPS DEFINE THE RANGE OF ALTERNATIVES

The purpose and need is a key factor in determining a range of alternatives (design and improvement options or strategies) to be considered for the US 93 corridor. The purpose and need helps establish the basis for developing a preliminary list of improvements and strategies to the transportation system that are expected to meet the goals and satisfy the needs for the corridor. Ultimately, the best course of action can be identified based on how well a particular alternative meets the intended purpose and addresses the issues and deficiencies (needs) of the corridor.

The purpose and need defines the fundamental reasons why changes to US 93 are being proposed. The US Highway 93 Somers to Whitefish FEIS was written around the following purpose and need statement:

> ***The primary purpose and need for improvements to US 93 is to reduce congestion on the existing facility, provide for planned growth and development, improve safety, provide for improved intermodal facility connections and provide for enhance scenic values.***

The FEIS noted the following secondary benefits which are anticipated to occur as a result of improvements to US 93: providing support to Flathead County economic development, enhancing

and supporting Flathead Valley visual quality, accommodating travel demands associated with population and employment growth, providing support to modal relationships (including pedestrian and bicycle circulation), and correcting US 93 deficiencies.

A Reevaluation of the FEIS as it relates to MDT's Whitefish-West project was completed during 2007. This document concluded the purpose and need for the Whitefish-West project on US 93 has not changed from that identified in the FEIS.

Since the time of the FEIS/ROD, several local land use planning efforts have been completed that have identified local desires to enhance downtown Whitefish, preserve the unique character of the community, and protect environmental features. However, the same fundamental needs identified in the FEIS—reduce congestion on US 93, improve safety, accommodate planned growth and development, improve intermodal connections, and provide visual enhancements—still exist within the Whitefish Urban corridor. For this reason, the original FEIS purpose and need statement remains valid for the corridor.

With the original FEIS purpose and need in mind, future improvements to US 93 through Whitefish must:

- incorporate physical changes to the roadway and its adjoining environment so the facility complies with MDT's geometric design criteria for Urban Principal Arterials;
- provide a transportation facility that meets current and future demands;
- improve the operation and efficiency of the facility for the traveling public by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor;
- reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations;
- provide facility improvements that consider recommendations made in the City's Growth Policy and Downtown Business District Master Plan; and
- ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses.

## DEVELOPMENT OF PRELIMINARY CORRIDOR DESIGN AND IMPROVEMENT OPTIONS

Alternatives as defined in the National Environmental Policy Act (NEPA) (40 CFR 1502.14) include a broad range of strategies from major modal alternatives and location alternatives to minor design changes that would mitigate anticipated adverse impacts. For corridor studies, alternatives typically consist of a wide variety of transportation system improvements and strategies that would be expected to meet established goals and objectives and address identified needs within the corridor.

Preliminary corridor design and improvement options are discussed on the following pages. These options include alternatives developed in the FEIS, design configurations developed after the FEIS/ROD, and other potential strategies to address transportation needs in the corridor.

## *Alternatives from the US Highway 93 Somers to Whitefish FEIS/ROD*

The US Highway 93 Somers to Whitefish FEIS considered several groups of alternatives including:

- Improving a parallel corridor to US 93;
- Providing a bypass around the City of Whitefish;
- Improving the capacity of US 93 through the City;
- Making minor improvements to existing US 93;
- Improving transit opportunities;
- Implementing measures to reduce demand for traffic to drive on US 93; and
- Making no improvements to US 93 (No Build Alternative)

These alternatives were developed in detail and analyzed in the FEIS based on their responsiveness to the project goals and objectives. Ultimately, the No-Build Alternative and 6 build options were evaluated in detail in the FEIS. Alternative C (Couplet-3) was identified as the Preferred Alternative for US 93 through Whitefish in the ROD.

**Build Alternatives for US 93 Considered in the FEIS.** Six build alternatives for US 93 through Whitefish were evaluated in detail in the FEIS. These design alternatives are briefly described below.

**A (Four-Lane).** This alternative followed the existing alignment of US 93 and involved the provision of four 11-foot-wide travel lanes along Spokane Avenue and 2nd Street and intersection improvements at Spokane and 2nd. Parking would be removed along Spokane Avenue and on 2nd Street between Spokane and Baker Avenues.

**C (Couplet-1).** The alternative consists of developing a one-way couplet, with Spokane Avenue providing for northbound traffic and Baker Avenue providing for southbound traffic. The alternative included upgrades to Baker Avenue and an extension of Baker Avenue to provide a connection with Spokane Avenue. 2nd Street would accommodate two-way traffic.

**C (Couplet-2).** The alternative was the same as Couplet-1 except a new bridge across the Whitefish River would be provided to connect Spokane Avenue and Baker Avenue and improve traffic flows on the proposed one-way street network.

**C (Couplet-3).** This alternative continues two-way traffic on Spokane Avenue to 7th Street where a one-way couplet begins on Spokane Avenue (for northbound traffic) and Baker Avenue (for southbound traffic). Like Couplet-2, this alternative provides a new bridge across the Whitefish River to link Spokane and Baker Avenues and accommodate two-way traffic.

**C (Couplet-4).** The alternative is similar to Couplet-1. However, the one-way couplet includes a two-way section between 5th and 8th Streets on Baker Avenue.

**C (Couplet-Offset).** The alternative consists of splitting US 93 traffic between Spokane Avenue and Baker Avenue by providing three-lane roadways. Spokane Avenue would have

two lanes for northbound traffic and one lane for southbound vehicles. 2nd Street would be reconfigured with two westbound lanes and one eastbound lane between Spokane and Baker Avenues. Baker Avenue would be redesigned to include two southbound lanes and one northbound lane. Parking would be removed along Spokane Avenue and on 2nd Street between Spokane and Baker Avenues.

**Bypass Routes Considered in the FEIS.** The US Highway 93 Somers to Whitefish FEIS/ROD identified five bypass alignments for US 93 in the Whitefish area. These options, listed below, were duly considered but not advanced in the FEIS because: they failed to divert substantial amounts of traffic off Spokane Avenue and 2nd Street; had the potential for substantial environmental impacts; and they generated significant public opposition.

**Bypass A.** Bypass A begins at an intersection with US 93 approximately 1.7 miles south of the US 93 intersection with MT 40. Bypass A travels in a northwesterly direction and follows an existing dirt road for the first 1.7 miles. The alignment then proceeds north through natural drainage swales to connect back with US 93.

**Bypass B.** Bypass B begins at the intersection of MT 40 and US 93. The alignment would then proceed west to meet with Blanchard Lake where a bridge would be required to cross the lake. After the bridge, the alignment would head northwest to connect back with US 93.

**Bypass C.** Bypass C begins at the intersection of MT 40 and US 93. The alignment would then follow the same alignment as Alternative B for the first 1.5 miles. At this point the alignment would then follow the eastern side of Blanchard Lake along existing power lines to a point where it would meet back up with US 93.

**Bypass D.** Bypass D would begin at the intersection of MT 40 and US 93 and would follow the same alignment as Bypass B until it intersects with Karrow Avenue (approximately 1.4 miles). The alignment would then proceed north along Karrow to intersect with US 93.

**Bypass E.** Bypass E was an extension of Whitefish Stage Road (beginning at MT 40 east of US 93) that continued north to 2nd Street east of downtown Whitefish. The route would bypass only a portion of the city and would require a new bridge across the Whitefish River.

**Other Alternatives Considered in the FEIS.** Other alternatives considered in the FEIS/ROD are described below.

**No-Build.** The No-Build Alternative examined in the FEIS consisted of the existing US 93 cross-section with some committed improvements, and minor, short-term maintenance or safety enhancements. This alternative was advanced for detailed evaluation in the FEIS/ROD.

**Mass Transit.** The FEIS considered several options for mass transit in this part of the Flathead Valley including: fixed guideway facilities (light rail transit, commuter rail transit, dedicated busways, and elevated transit systems (like a monorail); improvements to existing bus systems; and high occupancy vehicle (HOV) lanes.

Fixed guideway options were not advanced in the FEIS due to high capital and operating costs and the inability of such systems to generate enough riders to make the system financially feasible. Mass transit options were not advanced because they would not meet future travel demands on US 93 and would require substantial public subsidies to meet operating costs for an expanded bus system in the area. HOV lanes (or existing lanes designated for HOV use during peak periods) were likely to make traffic congestion worse in existing travel lanes and would not significantly reduce travel.

**Transportation Demand Management (TDM).** TDM strategies are relatively low-cost ways of reducing travel demand and improving traffic flow during peak hours. These strategies consist of programs or policies focused on either reducing the number of vehicles on the roadway or distributing trips to less congested periods of the day.

The US Highway 93 Somers-Whitefish FEIS considered a group of TDM options to address transportation needs in the US 93 corridor including: increased telecommuting, variable work hours, employer based carpool and vanpool programs, and parking management strategies. The FEIS did not advance TDM strategies because they are primarily directed at commuter travel or travel that regularly occurs and they would potentially result in a decrease in travel of less than 1%. It was recognized that there are few large employers in Whitefish area that could effectively implement carpool or vanpool programs. The FEIS concluded TDM strategies (by themselves) would not meet the future travel demands on US 93.

## *Preferred Alternative in the FEIS/ROD*

Ultimately, the No-Build Alternative and 6 build alternatives were evaluated in detail with Alternative C (Couplet-3) being identified as the Preferred Alternative for US 93 through Whitefish in the ROD. The alternatives refinement process is summarized in **Table 1**.

The FEIS/ROD identified Couplet-3 as the Preferred Alternative for the following reasons:

- enhanced traffic operations and level of service when compared to other alternatives;
- less out-of-direction travel when compared to other couplet alternatives;
- protection of the residential character along Baker Avenue south of 7th Street;
- enhanced circulation to Whitefish schools;
- traffic relief on 2nd Street;
- support for the City's development goals in the southwestern area of Whitefish; and
- support by the Whitefish City Council.

The Preferred Alternative identified in the ROD also included the development of Alternative A (Median) on Spokane Avenue between MT 40 and the Whitefish River when warranted by traffic volumes. With respect to the corridor, this design recommendation applies to Spokane Avenue between 13th Street and 7th Street and calls for the provision of four 12-foot-wide travel lanes, a 20-foot wide center median (a flush median is used south of 13th Street), two 8-foot-wide shoulders, and five-foot-wide sidewalks separated from the roadway by a narrow buffer.

The FEIS also described several other special design concepts associated with the Preferred Alternative for the US 93 corridor including: "gateway" treatment at the south entry to Whitefish

(near the existing Whitefish river crossing on Spokane Avenue); ensuring connections with planned pedestrian and bicycle facilities; limited landscaping treatments; and minor improvements to existing transportation infrastructure (including signals, lighting, signage, and removal of parking at some locations).

**Table 1: Alternatives Presented in the US Highway 93 Somers to Whitefish FEIS/ROD for the Whitefish Urban Area**

| Alternatives Initially Considered in FEIS | Alternatives Evaluated in Detail in the FEIS | Alternative Selected in the FEIS/ROD |
|---|---|---|
| No-Build<br>A (Four Lane)<br>Bypass A<br>Bypass B<br>Bypass C<br>Bypass D<br>Bypass E<br>Couplet (originally called Alternative G)<br>Mass Transit<br>Transportation Demand Management (TDM) | No-Build<br>A (Four Lane)<br>C (Couplet-1)<br>C (Couplet-2)<br>C (Couplet-3)<br>C (Couplet-4)<br>C (Couplet-Offset) | C (Couplet-3)<br>A (Median) from 13th Street to 7th Street |

## *Design Configurations Developed After the FEIS/ROD*

Following the Record of Decision on the FEIS, MDT began work on two reconstruction projects on US 93 through Whitefish designated as Whitefish Urban and Whitefish West. In an effort to involve the community in the design of US 93, a Citizens Working Group (CWG) was formed to offer comment to the Federal Highway Administration (FHWA), MDT, local decision-makers and MDT's design consultant. The CWG met numerous times during 2005 and identified several conditions in the community that are different or had changed since the time of the FEIS/ROD. These changed conditions include:

- Traffic growth and distribution;
- Development of the Whitefish Downtown Business District Master Plan (2006) ;
- Potential economic effects of the recommended one-way street system;
- Completion of the Big Mountain Neighborhood Plan (2006); and
- Development of the Whitefish City-County Growth Policy (2007).

MDT's design consultant completed a traffic analysis for the Whitefish Urban project that identified several capacity and geometric deficiencies with the Preferred Alternative specified in the ROD. Based on the input from the CWG and the results of the traffic analysis, MDT's design consultant developed a modification to the ROD Preferred Alternative to address capacity and geometric deficiencies and called the option the "**Modified ROD Configuration**".

Additionally, two other design concepts for the US 93 corridor—known as the "**Contra-Flow Configuration**" and the "**Truck Route Configuration**"—were developed in response to reflect newly identified concerns or reflect community desires expressed in the Growth Policy and Downtown Business District Master Plan. Both configurations were presented as ways to improve downtown circulation by eliminating one-way streets, provide an alternate route for trucks on Baker

Avenue, and to be responsive to recommendations in the Downtown Business District Master Plan, particularly on 2nd Street where a two-lane configuration is proposed instead of a three-lane design associated with the build alternatives in the FEIS.

## *Downtown Business District Master Plan Configuration*

The Downtown Business District Master Plan recommended street configurations for Spokane Avenue, 2nd Street, and Baker Avenue within the downtown area of Whitefish. The **"Downtown Business District Master Plan Configuration"** would provide two northbound travel lanes on Spokane Avenue north of 7th Street, maintain two travel lanes on 2nd Street, and provide one northbound travel lane and two southbound travel lanes on Baker Avenue between 2nd and 7th Streets. This configuration would also employ a new bridge across the Whitefish River accommodating two eastbound lanes and one westbound lane.

The concepts presented in the Downtown Business District Master Plan were based on the Spokane Avenue-Baker Avenue couplet concept from the FEIS/ROD except that a northbound "contra-flow" lane would be provided on Baker Avenue north of a new bridge at 7th Street. The origin of the contra-flow concept was opposition to a one-way street configuration in the downtown expressed by some in the business community and the additional circulation benefits provided by such a feature. The Plan is also very specific that 2nd Street should be maintained as a two-lane street but accepts some parking loss to accommodate the provision of turn lanes at 2nd and Baker. The Downtown Business District Master Plan Configuration also recommends specific designs for pedestrian and bicyclist facilities along Spokane Avenue and 2nd Street.

The Downtown Plan has been adopted by the City and made a part of the Whitefish City-County Growth Policy. The City has already begun efforts to implement several of the catalyst projects identified in the plan.

## *Consideration of Additional New Design Configurations for the Corridor*

MDT's Whitefish-Urban project generally extends from the intersection of Spokane Avenue and 13th Street to the intersection of 2nd Street and Baker Avenue. Without going substantially beyond this project area, no new or "previously undiscovered" design configurations are proposed for the Whitefish Urban corridor. The design options identified in this memo include a broad range of design concepts and actions for addressing current and future transportation needs within the urban corridor.

The design options presented earlier embody the following range of actions:

- Improve the existing Facility (Modify only Spokane Avenue and 2nd Street); and
- Use other streets to help address current and future travel demands in the corridor.

The design options consider various ways to accommodate traffic flows within the corridor by:

- Maintaining the existing two-way traffic flows on Spokane Avenue and 2nd Street;
- Providing four-lanes on all or portions of Spokane Avenue and 2nd Street;

- Developing a "couplet" configuration to accommodate northbound and southbound on Spokane and Baker Avenues with one-way traffic configurations or two-way traffic provisions on all or portions of the streets;
- Employing a "contra-flow" traffic circulation pattern through portions of downtown Whitefish; and
- Enhancing east-west connectivity by linking Spokane Avenue and Baker Avenue with a new bridge at 7th Street.

A fundamental of the Whitefish Transportation Plan is to enhancing connectivity by adding logical and beneficial east-west and north-south links to the existing road and street network. While a new river crossing at 7th Street will require a long bridge and cross the widest part of the river's floodplain and associated wetland area, it is the logical place for making a new east-west connection because 7th Street is the only east-west street that already connects Baker and Karrow Avenues. Other crossing locations south of 5th Street are not viable because of existing commercial and residential development. Other streets west of the river (6th, 8th, and 9th Streets) are discontinuous and have very irregular alignments making these streets poor candidates for improvement.

Moving trucks off Spokane Avenue and 2nd Street is a strong local desire. Several design options have already been developed that attempt to do this notably the Truck Route Configuration and other design options that provide connections between Spokane and Baker Avenues at 7th or 13th Streets.

## *Off-System Improvements that Could Indirectly Benefit the US 93 Corridor*

Work for the Whitefish Transportation Plan included modeling of numerous "Alternative Scenarios" to examine the effects of changes to the road and street network like extending existing routes or adding new arterial links, adding a new crossing over the BNSF Railway, adding new bridges across the Whitefish River, and providing other network improvements to enhance travel within the Whitefish Study Area. The options modeled for the Transportation Plan were typically associated with "off-system" roads—roads not on the state's Urban System or under MDT's maintenance responsibility. These off-system roads serve as a supporting local road network to US 93.

While these "off-system" road improvements are not essential to the operation of US 93, they offer the potential for enhancing whatever improvements are recommended for the corridor. Locally implemented improvements to off-system roads may indirectly benefit traffic operations on US 93 by diverting traffic from the corridor or by offering alternate routes for travel within the community.

In total, seventeen (17) Alternative Scenarios were test modeled as part of the work for the Whitefish Transportation Plan. **Figure 1** shows the Alternative Scenarios considered in the Transportation Plan. The results of the Alternative Scenario modeling reflect year 2030 projected traffic volumes on the E + C network and allow analysts to readily identify the potential changes in traffic flows on local streets and the US 93 corridor.

Off-system improvement options with the potential to affect operations on the US 93 corridor include:

- **Western Route Alternates (Alternative Scenarios AS-1 through AS-4).** These scenarios correspond to Bypass Routes A-D considered in the FEIS/ROD and offer the potential to draw some traffic away from the US 93 corridor.

- **Baker Avenue Extension** (**Alternative Scenario AS-5).** This scenario would extend Baker Avenue south from 19th Street and provide a connection to US 93 at JP Road. This new roadway link would provide a new north-south route parallel to US 93/Spokane Avenue and serve commercial areas in the southern portion of the City.

- **Texas/Columbia Avenue Railroad Crossing (Alternative Scenario AS-9).** This scenario consists of adding an elevated crossing over the BNSF Railway to connect Texas Avenue with Columbia Avenue. This improvement would make Columbia Avenue a parallel north-south route to US 93 and Baker Avenue (north of 2nd Street) and would provide another grade separated railroad crossing in the community. Traffic headed to or from destinations on the north side of Whitefish would be the primary beneficiaries of such an improvement.

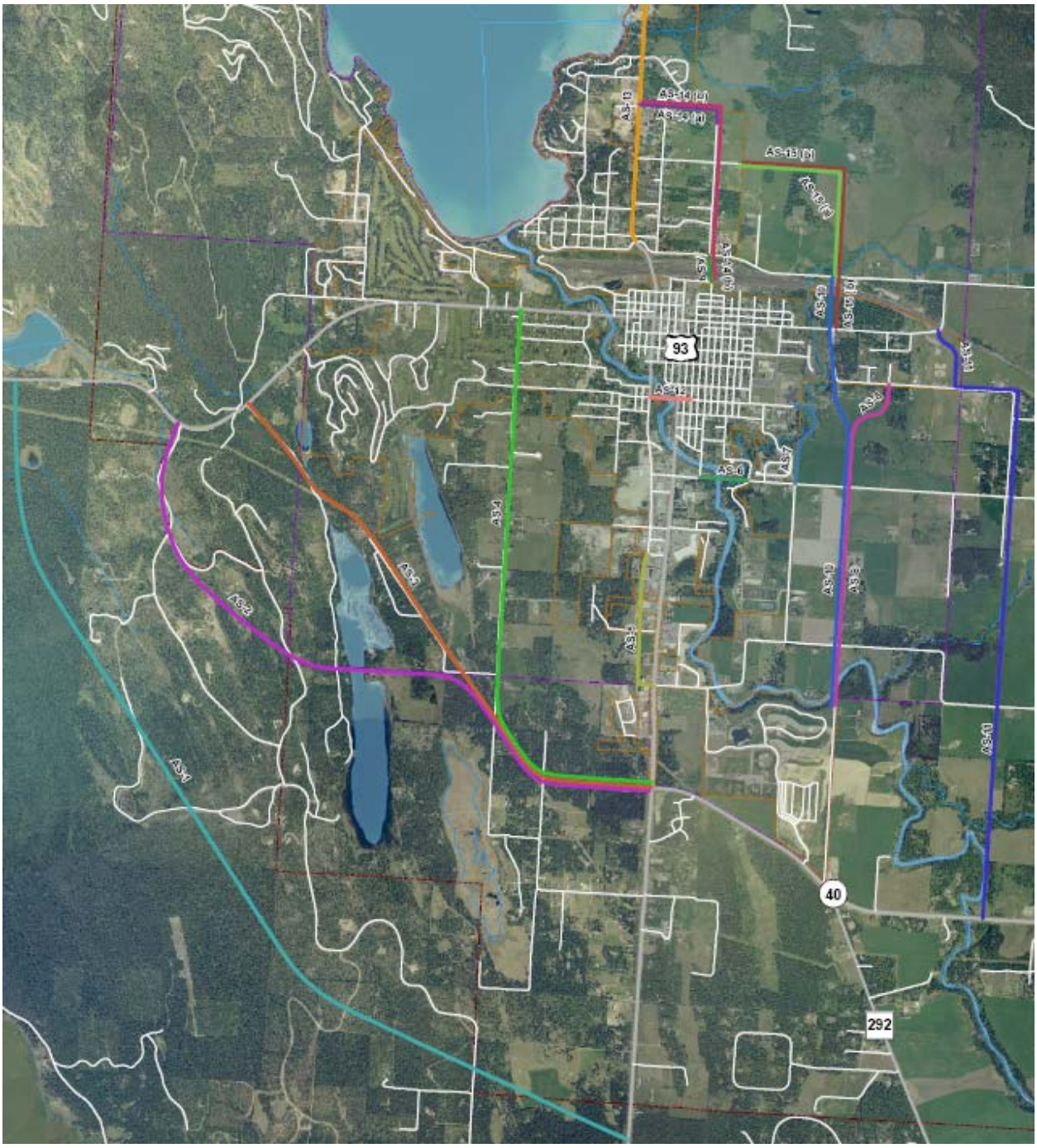
- **Eastside Route Alternates (Alternative Scenarios AS-8, AS-10, AS-11, AS-15a/AS-15b).** These scenarios include development of north-south road connections along the eastern perimeter of the City of Whitefish. The improvement would generally result in the provision of new north-south roadway corridors 1 or 2 miles east of the existing US 93 corridor, a new elevated railroad crossing, and improved access to the north side of Whitefish.

- **7th Street Bridge Addition (Alternative Scenario AS-12).** This scenario involves adding a new bridge across the Whitefish River at 7th Street linking Baker and Spokane Avenues. While various FEIS/ROD alternatives included this feature, this scenario allows the operational effects associated with adding a new bridge and enhancing this new east-west link to be tested independently from other improvements to US 93 and Baker Avenue.

- **13th Street Bridge Addition (Alternative Scenario AS-6).** This scenario would add a bridge across the Whitefish River and provide a beneficial new roadway along 13th Street (east of Columbia Avenue). The improvement would facilitate east-west movements between Baker and Spokane Avenues and Voerman Road.

These off-system improvements should not be viewed as essential "add-on" elements of the design options identified for the US 93 corridor through Whitefish since the facility would operate without the implementation of these local projects.

## Figure 1: Whitefish Transportation Plan Alternative Scenarios



### *ITS Strategies*

The US Highway 93 Somers to Whitefish FEIS did not identify Intelligent Transportation Systems (ITS) as a potential strategy to address some of the identified needs on US 93 through Whitefish. ITS encompasses a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance productivity. ITS ensures facility users have broad access to all informational services needed to make and execute efficient travel and transport choices, both before and during trips. In general, ITS projects offer these overall benefits:

- Enhanced public safety;
- Reduced congestion;
- Improved access to transit and travel information;
- Cost savings to motor carriers, transit operators and government; and
- Reduced environmental impacts.

The Whitefish Transportation Plan does not identify ITS as a recommended strategy for improving transportation in the community. However, this option will be subject to preliminary screening for the corridor study.

## OPTIONS NOT WARRANTING INITIAL CONSIDERATION IN THE CORRIDOR STUDY

Considering the original FEIS purpose and need statement and the list of needs for future improvements to US 93 through Whitefish presented on page 2 of this memo, the following preliminary design options or strategies do not appear to warrant initial consideration in the corridor study.

- FEIS **Bypass Alternative E.** Bypass E from the US Highway 93 Somers to Whitefish FEIS was not selected for consideration in the corridor study. This potential bypass route in the eastern portion of Whitefish does not offer an attractive alternate to the use of Spokane Avenue and 2nd Street. The bypass route identified in the FEIS did not originate on US 93 south of Whitefish and its use would require that traffic pass through the corridor on 2nd Street. In our opinion, it is unlikely this bypass route would divert enough traffic from the US 93 corridor.

- **Develop Columbia Avenue as a Parallel Arterial to Spokane Avenue.** Columbia Avenue, located two blocks east of Spokane Avenue, is also a continuous north-south street beginning at 13th. It is our view that this street (as well as other north-south streets east of Spokane Avenue) offer little potential for development as parallel streets to help address traffic demands on the existing corridor. Columbia Avenue passes through some of Whitefish's older residential neighborhoods and arterial street development would be out of character with these neighborhoods. The improvements to Columbia Avenue would be unlikely to attract through traffic from the existing corridor since Spokane Avenue represents a more direct travel route. Additionally, even if traffic from US 93 were drawn to such a route, there is no way for traffic headed to the north side of Whitefish to cross the

BNSF Railway. As a result, vehicles would be forced to travel west on 2nd Street and back into the corridor or easterly to an at-grade crossing at the eastern edge of Whitefish.

Baker Avenue (a north-south street located two blocks west of Spokane Avenue) extends from 19th Street to the grade separation over the BNSF Railway north of Railway Street. Baker Avenue already provides a parallel alternate route to Spokane Avenue even though this street is not designated as part of US 93. Most of the design options under consideration use Baker Avenue to some extent to help redistribute traffic within the corridor.

- **Strict Reliance on Non-motorized Transportation Facilities.** This option would involve making pedestrian and bicyclist improvements and implementing policies to encourage non-motorized travel as a means of reducing vehicle travel on the US 93 corridor. Although this presents an admirable goal, strict reliance on non-motorized transportation to alleviate traffic congestion and meet future travel demands within the corridor is unrealistic. A brief literature search on this topic suggests that some 5-10% of automobile trips can reasonably be shifted to non-motorized transport in a typical urban area (i.e., highly populated metropolitan areas developed at a higher density than the City of Whitefish). This may be increased if driving disincentives are implemented in conjunction with a non-motorized transportation emphasis.

  Future improvements to the US 93 corridor would accommodate all appropriate travel modes and be designed to make appropriate connections to the City of Whitefish's planned pedestrian and bicycle trail system.

- **Fixed Guideway Options and HOV Lanes.** The FEIS considered several options for mass transit in the Flathead Valley including: fixed guideway facilities (light rail transit, commuter rail transit, dedicated busways, and elevated transit systems (like a monorail); and high occupancy vehicle (HOV) lanes. These options were not advanced for detailed evaluation in the FEIS.

  Given that these options have a "regional" focus and have not been proposed as ways to address future travel demands in the greater Flathead Valley, we do not believe they warrant consideration in the corridor study which is focused on a short (1± mile) segment of US 93.

## OPTIONS WARRANTING INITIAL CONSIDERATION IN THE CORRIDOR STUDY

In our opinion, the options presented below in **Table 2** warrant initial consideration in the Whitefish Urban Corridor Study. They include build alternatives for the Whitefish Urban area identified in the FEIS/ROD, the design configurations developed after the completion of the FEIS/ROD, several alternatives and options considered but not advanced in the FEIS, and intelligent transportation system (ITS) strategies.

**Table 2: Options Receiving Initial Consideration in the Corridor Study**

| Alternatives Evaluated in Detail in the FEIS/ROD | Design Configurations Developed After the FEIS/ROD | Other Options Warranting Consideration |
|---|---|---|
| No-Build<br>A (Four Lane)<br>C (Couplet-1)<br>C (Couplet-2)<br>C (Couplet-3) – PREFERRED ALT<br>C (Couplet-4)<br>C (Couplet-Offset) | Modified ROD Configuration<br>Contra-Flow Configuration<br>Truck Route Configuration<br>Downtown Business District<br>Master Plan Configuration | Revisit Western Route Alternates (FEIS Bypass Alternatives A - D)<br>Revisit TDM<br>Revisit TSM<br>Transit Improvements<br>Intelligent Transportation System (ITS) Strategies<br>Selected Off-system Improvements Indirectly Benefiting the Corridor |

## DESCRIPTION OF INITIAL CORRIDOR OPTIONS

### *No Action*

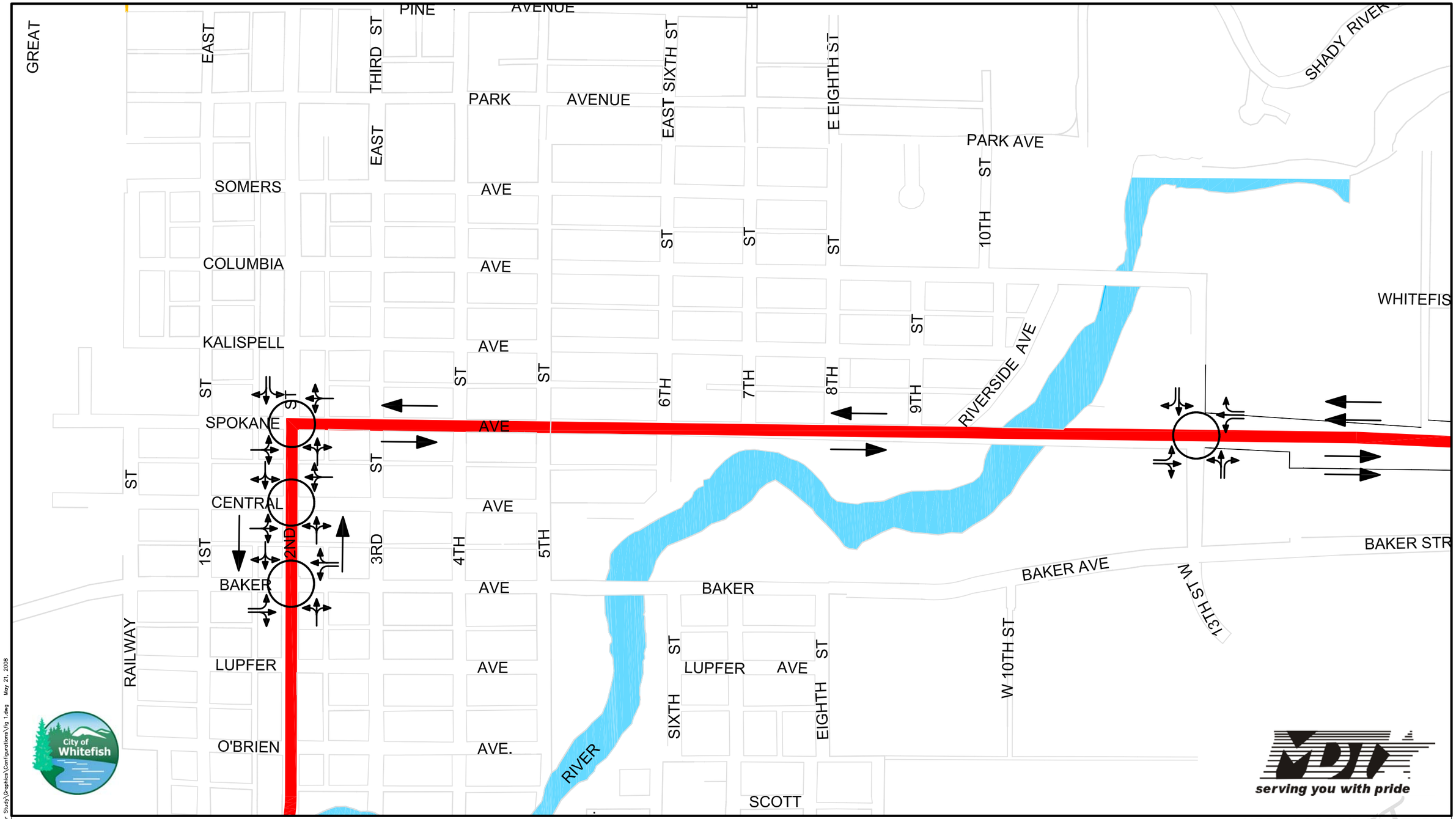
No Action represents the existing two-lane system along Spokane Avenue and 2nd Street that is in place today. This option provides baseline conditions which can be used to compare other corridor design and improvement options. The No Action option is represented by two conditions: existing and future.

The existing No Action condition mirrors the current lane and signal configurations on US 93 through Whitefish. The signal timing for each signal within the network was determined from existing signal timing data obtained from the MDT. A detailed diagram with intersection turning movements is illustrated on **Figure 2**.

The future No Action condition assumes the existing system plus committed projects are in place by the year 2030. This system was identified as the E+C Network for travel demand modeling conducted for the Whitefish Transportation Plan. The only identified committed improvement considered in the model is MDT's Whitefish-West project. The Whitefish-West project extends from RP 127.8 (located on 2nd Street between Baker and Lupfer Avenues) to RP 133.0 west of Whitefish. The project is currently in the design phase. No other local improvements to the transportation network were assumed.

The Whitefish Transportation Plan recommends numerous and extensive improvements to the local street network including new bridges and road connections in order to help meet the anticipated traffic demands for the year 2030. However, there is no certainty that MDT or the City of Whitefish will implement all of these projects over the planning horizon. The E+C Network offers a very "conservative" representation of the future street system in Whitefish.

All signal timing within the network was optimized by using *Synchro's* "optimize signal timing" feature. This analysis establishes a baseline for future traffic conditions. The detailed diagram with intersection turning movements for the future No Action condition would be the same as that shown on **Figure 2**.

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URBAN CORRIDOR STUDY
OF US HIGHWAY 93
Figure 2
**NO ACTION CONFIGURATION**
**EXISTING (2003) AND FUTURE (2030) CONDITIONS**

## *US Highway 93 Design and Improvement Options*

Various highway design options were generated and considered for US 93 through Whitefish as part of the US Highway 93 Somers to Whitefish FEIS/ROD. Additional designs were developed by MDT's design consultant for the Whitefish Urban and Whitefish West projects during 2005 and 2006. Further, the Whitefish Downtown Business District Master Plan (approved by the City of Whitefish) lays out transportation network improvements in the downtown affecting Spokane Avenue, 2nd Street and Baker Avenue.

These options are highlighted on the following pages.

Please note that Couplet-3 is identified as the FEIS/ROD Preferred Alternative in the text and narrative in the remainder of this memo.

It should be noted that all of the design and improvement options assume that Spokane Avenue between 13th and 7th Streets would be developed as a four-lane with center median like the existing roadway south of 13th Street. This is consistent with the FEIS/ROD Preferred Alternative which identifies Alternative A (Median) as being appropriate for this portion of the US 93 corridor.

## *RECORD OF DECISION PREFERRED ALTERNATIVE (COUPLET-3)*

This option comes from the US Highway 93 Somers to Whitefish FEIS/ROD. The FEIS/ROD identifies this option as "Alternative C (Couplet 3)" and as the Preferred Alternative for improvements to US 93 in the downtown area of Whitefish. This design and improvement option consists of a two-lane, one-way couplet along Spokane Avenue and Baker Avenue north of 7th Street, with 2nd Street being turned into a three-lane system between Spokane Avenue and Baker Avenue. A new bridge across the Whitefish River would be provided at 7th Street to link Spokane Avenue and Baker Avenue. A detailed diagram with intersection turning movements can be found on **Figure 3**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

This section of Spokane Avenue would be a one-way roadway with two northbound lanes. On-street parking would be allowed with a bike lane being added to the right side of the street.

**2nd Street (Spokane Avenue – Baker Avenue)**

Two westbound lanes and one eastbound lane would be provided at this location. On-street parking would be allowed on the south side of 2nd Street.

**Baker Avenue (2nd Street – 7th Street)**

This section would consist of a one-way roadway with two southbound lanes. On-street parking would be allowed on the left side with a bike lane on the right side of Baker Avenue.

**7th Street (Baker Avenue – Spokane Avenue)**

A new bridge would be constructed across the Whitefish River allowing 7th Street to connect Baker Avenue and Spokane Avenue. Two eastbound lanes and one westbound lane would be provided with signals at the intersections with Baker Avenue and Spokane Avenue.

**7th Street (Spokane Avenue – Kalispell Avenue)**

A new connection would be made along 7th Street between Spokane Avenue and Kalispell Avenue consisting of one lane in each direction.

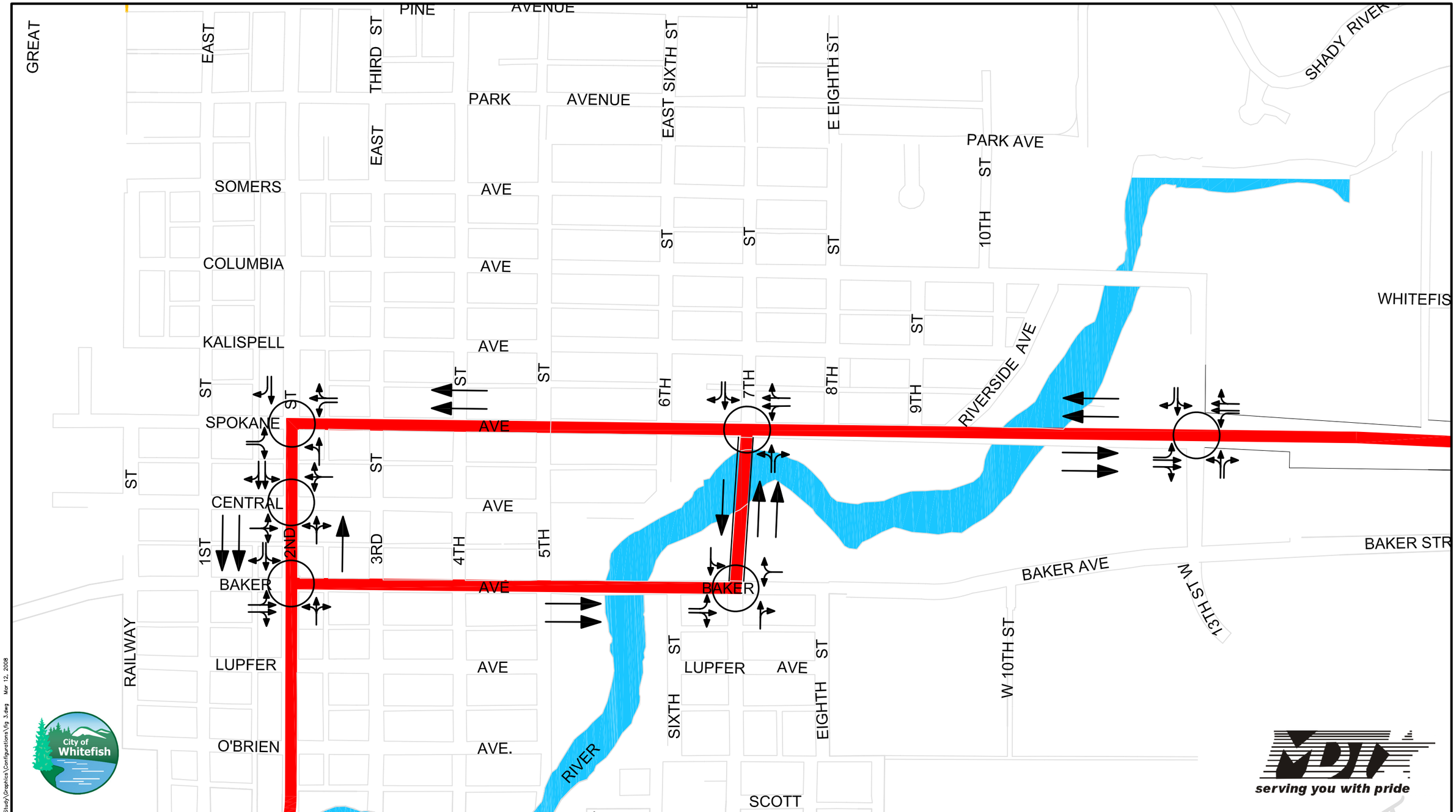
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Figure 3
RECORD OF DECISION
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## *MODIFIED RECORD OF DECISION CONFIGURATION*

The Modified Record of Decision (ROD) configuration was developed during design work for MDT's Whitefish Urban project and was presented in the Preliminary Traffic Report for the project (WGM Group, Inc. February 2006). The option is a modified version of the ROD Preferred Alternative described earlier. Intersection modifications were made to improve traffic flow and efficiency based on future traffic volumes. A detailed diagram with intersection turning movements can be found on **Figure 4**.

Key elements of this option are provided below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

This section of Spokane Avenue would be a one-way roadway with two northbound lanes. On-street parking would be allowed on both sides of the street with a bike lane being added to the right side of the street. Double northbound left-turn lanes with additional width provided for trucks would be added at the intersection with 2nd Street.

**2nd Street (Spokane Avenue – Baker Avenue)**

Two westbound lanes and one eastbound lane would be provided at this location. On-street parking would be allowed on the south side of 2nd Street. Eastbound left-turn lanes would be added at the intersections with Baker Avenue and Central Avenue. A westbound left-turn lane at the intersection with Baker Avenue would also be added under this alternative.

**Baker Avenue (2nd Street – 7th Street)**

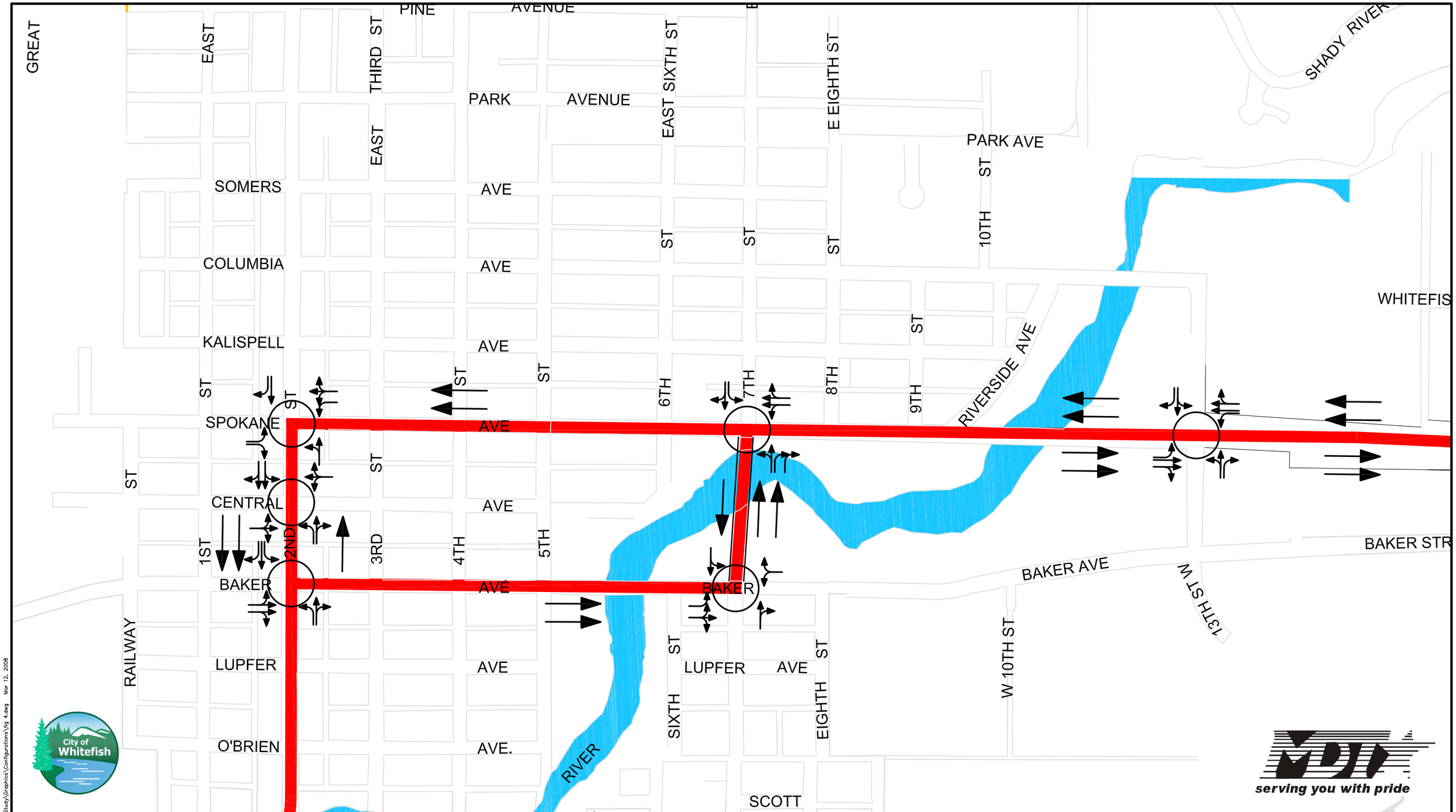
This section would consist of a one-way roadway with two southbound lanes. On-street parking would be allowed on the left side with a bike lane on the right side of Baker Avenue. A southbound double left-turn lane would be added at the intersection with 7thStreet.

**7th Street (Baker Avenue – Spokane Avenue)**

A new bridge would be constructed across the Whitefish River allowing 7th Street to connect to Baker Avenue and Spokane Avenue. Two eastbound lanes and one westbound lane would be provided along with signals at the intersections with Baker Avenue and Spokane Avenue. Double eastbound right-turn lanes would be added at the intersection with Spokane Avenue.

**7th Street (Spokane Avenue – Kalispell Avenue)**

A new connection would be made along 7th Street between Spokane Avenue and Kalispell Avenue consisting of one lane in each direction. A westbound left-turn lane and combined thru/right-turn lane would be added at the intersection with Spokane Avenue.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MODIFIED RECORD OF
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## *CONTRA-FLOW CONFIGURATION*

The Contra-Flow configuration was developed during design work for MDT's Whitefish Urban project and was presented in the Preliminary Traffic Report for the project (WGM Group, Inc. February 2006). This option provides two-way travel along Spokane Avenue and Baker Avenue and has one lane in each direction along 2nd Street. This design option is intended to improve circulation in the downtown area while providing an alternative truck route along Baker Avenue. The one lane in each direction along 2nd Street provided in this option is consistent with recommendations for 2nd Avenue in the Whitefish Downtown Business District Master Plan. A detailed diagram with intersection turning movements can be found on **Figure 5**.

Key elements of this option are provided below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

This section of Spokane Avenue would have two northbound lanes and one southbound lane. On-street parking would be eliminated on both sides of the street; however, a bike lane would be added to the right side of the street. Northbound, southbound, and westbound left-turn lanes would be provided at the intersection with 7th Street.

**2nd Street (Spokane Avenue – Baker Avenue)**

One westbound and one eastbound lane would be provided at this location. On-street parking would be provided on both sides of the street at this location. Left turns would be prohibited onto Central Avenue. Eastbound and westbound left-turn lanes would be added at the intersection with Spokane Avenue. Larger corner radii and left turn lanes would also be added in all directions at the intersection with Baker Avenue.

**Baker Avenue (2nd Street – 7th Street)**

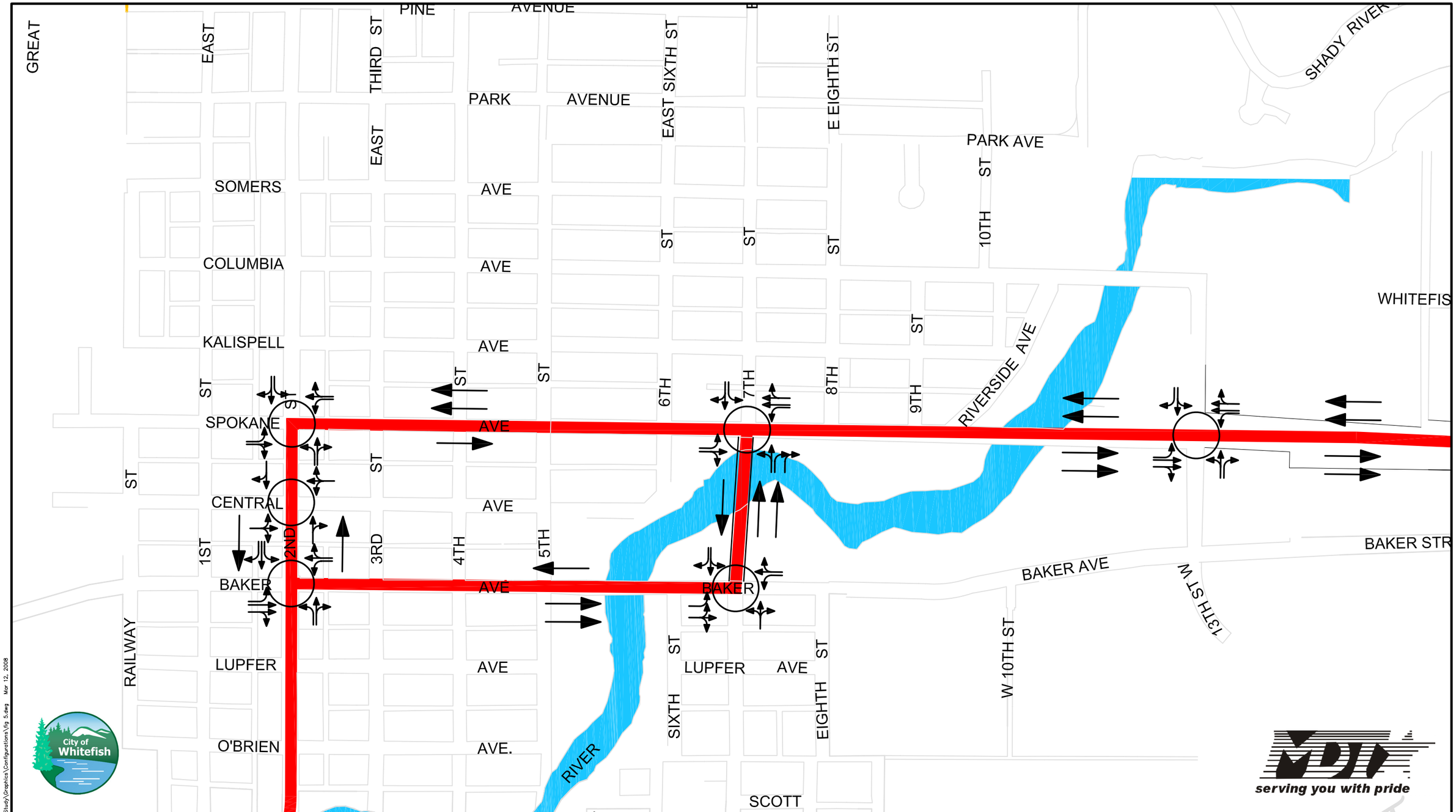
This section would consist of two southbound lanes and one northbound lane. On-street parking would be eliminated in this section. A bike lane would be added on the right side of Baker Avenue. A southbound double left-turn lane would be added at the intersection with 7$^{th}$ Street.

**7th Street (Baker Avenue – Spokane Avenue)**

A new bridge would be constructed across the Whitefish River allowing 7th Street to connect to Baker Avenue and Spokane Avenue. Two eastbound lanes and one westbound lane would be provided with signals at the intersections with Baker Avenue and Spokane Avenue. Double eastbound right-turn lanes would be added at the intersection with Spokane Avenue. A westbound right-turn lane would also be added at the intersection with Baker Avenue.

**7th Street (Spokane Avenue – Kalispell Avenue)**

A new connection would be made along 7th Street between Spokane Avenue and Kalispell Avenue consisting of one lane in each direction. A westbound left-turn lane and combined thru/right-turn lane would be added at the intersection with Spokane Avenue.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CONTRA-FLOW
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## *TRUCK ROUTE CONFIGURATION*

The Truck Route configuration was developed during design work for MDT's Whitefish Urban project and was presented in the Preliminary Traffic Report for the project (WGM Group, Inc. February 2006). This design provides one lane in each direction along Spokane Avenue and 2nd Street, with two northbound lanes and one southbound lane along Baker Avenue. This option is intended to remove truck traffic from the downtown area. The one lane in each direction along 2nd Street provided in this option is consistent with the Whitefish Downtown Business District Master Plan. A detailed diagram with intersection turning movements can be found on **Figure 6**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

This section of Spokane Avenue would have one lane in each direction with on-street parking and a bike lane. Double northbound left-turn lanes with additional width provided for trucks would be added at the intersection with 7th Street. A southbound left-turn lane would also be added at this location.

**2nd Street (Spokane Avenue – Baker Avenue)**

One westbound and one eastbound lane would be provided at this location. On-street parking would be allowed on both sides of the street. Left turns would be prohibited at the intersection with Central Avenue. Eastbound and westbound left-turn lanes would be added at the intersection with Spokane Avenue. Larger corner radii and left turn lanes would also be added in all directions at the intersection with Baker Avenue.

**Baker Avenue (2nd Street – 7th Street)**

This section would consist of a two northbound lanes and one southbound lane along Baker Avenue. On-street parking would be removed along Baker Avenue; however, a bike lane on the right side of Baker Avenue would be added.

**7th Street (Baker Avenue – Spokane Avenue)**

A new bridge would be constructed across the Whitefish River allowing 7th Street to connect Baker Avenue and Spokane Avenue. Two westbound lanes and one eastbound lane would be provided with signals at the intersections with Baker Avenue and Spokane Avenue. Double westbound right-turn lanes would be added at the intersection with Baker Avenue.

**7th Street (Spokane Avenue – Kalispell Avenue)**

A new connection would be made along 7th Street between Spokane Avenue and Kalispell Avenue consisting of one lane in each direction. A westbound left-turn lane and combined thru/right-turn lane would be added at the intersection with Spokane Avenue.

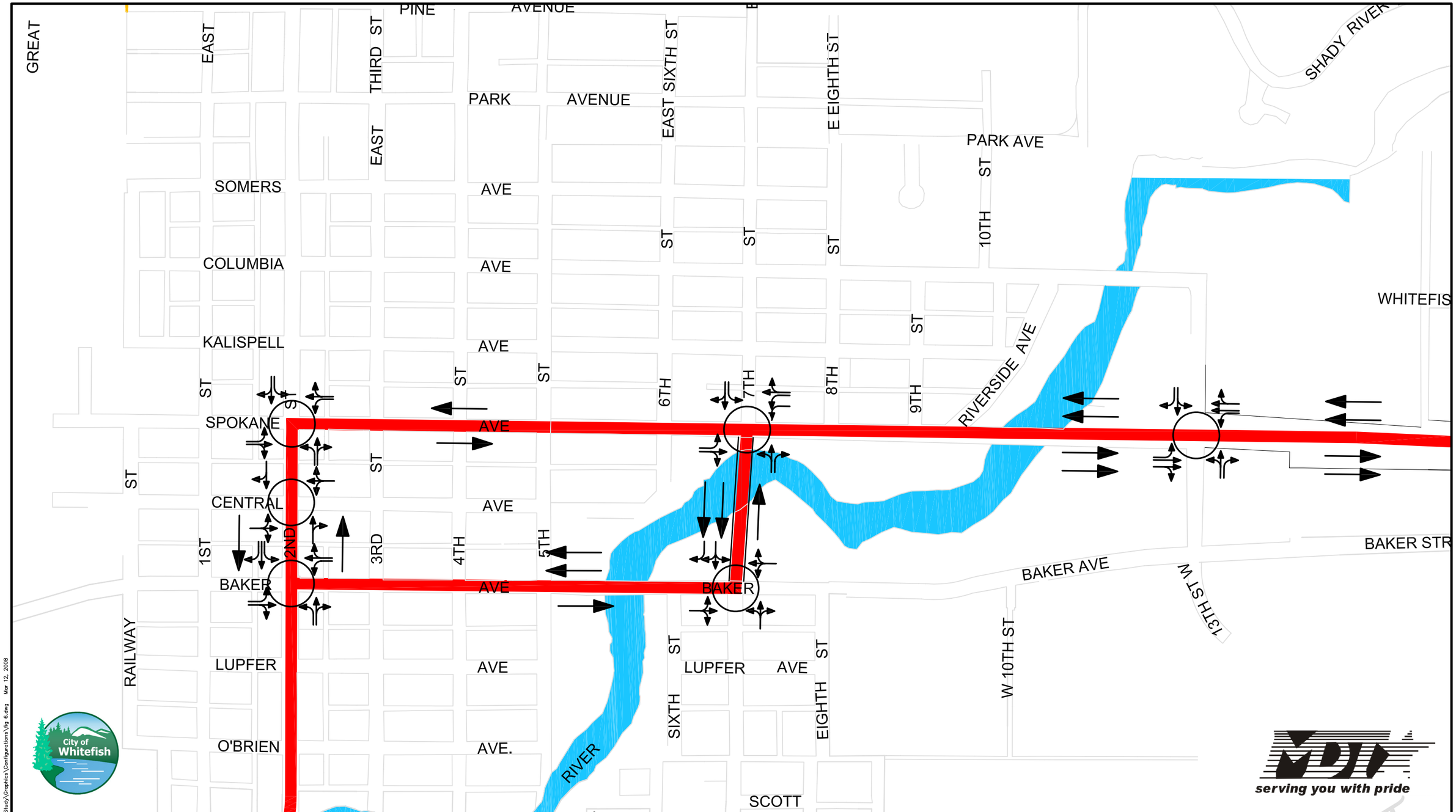
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Figure 6
TRUCK ROUTE
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## *ALTERNATIVE A (4-LANE)*

Alternative A (4-Lane) comes from the US Highway 93 Somers to Whitefish FEIS. This design option calls for two travel lanes in each direction along Spokane Avenue and along 2nd Street between Spokane Avenue and Baker Avenue. Baker Avenue would be unchanged and a 7th Street connection would not be made under this option. Left-turns would be prohibited at peak hours along Spokane Avenue and 2nd Street. A detailed diagram with intersection turning movements can be found on **Figure 7**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

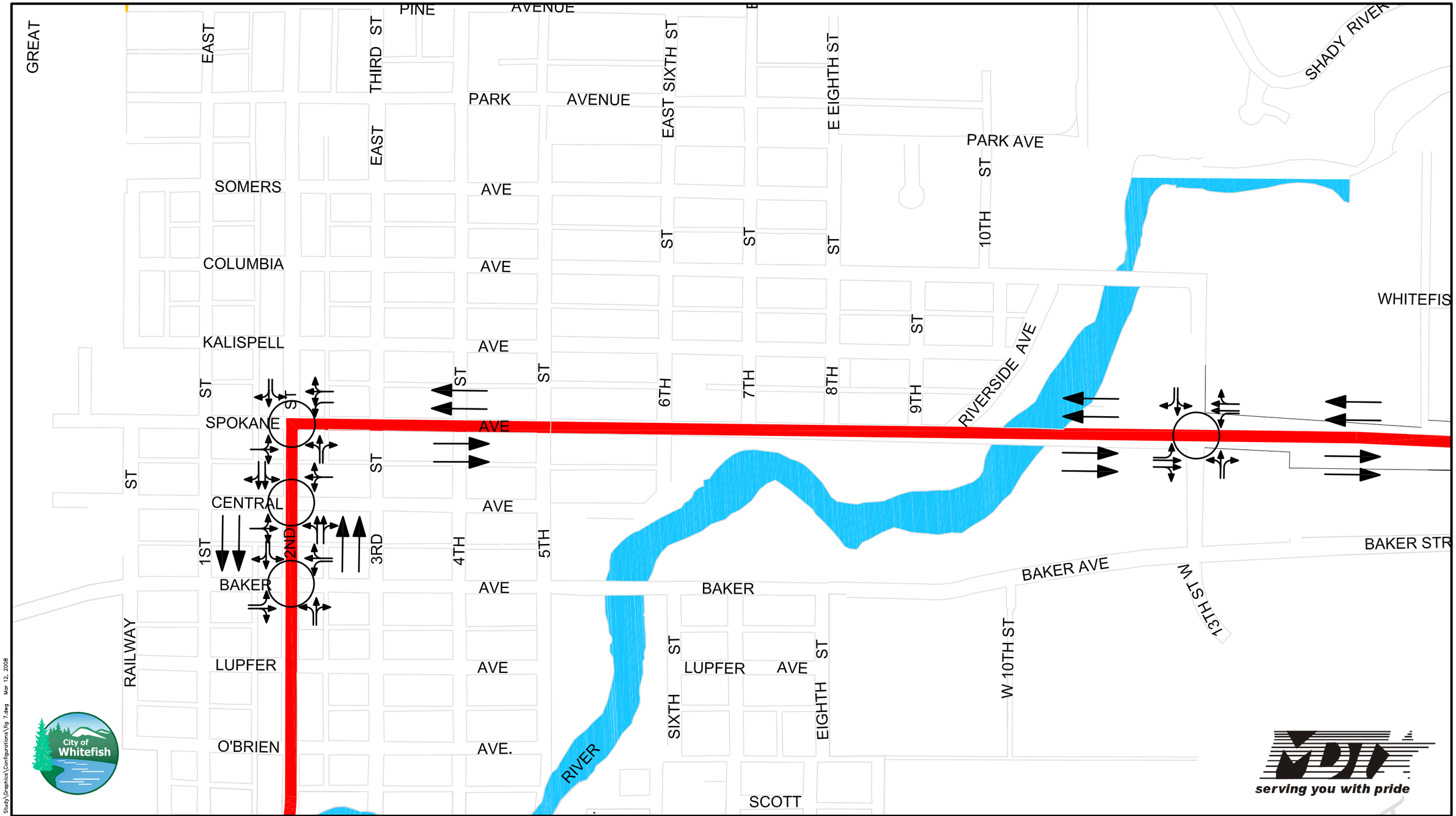
This section of Spokane Avenue would have two lanes in each direction with no on-street parking or bike lanes. Dual northbound left-turn lanes would be provided at the intersection with 2nd Street.

**2nd Street (Spokane Avenue – Baker Avenue)**

Two westbound and two eastbound lanes would be provided at this location. On-street parking would be eliminated on both sides of the street.

**Baker Avenue (2nd Street – 7th Street)**

This section would be unchanged under this alternative.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ALTERNATIVE A (4-LANE)
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## *ALTERNATIVE C (OFFSET)*

Alternative C (Offset) is a design option identified in the US Highway 93 Somers to Whitefish FEIS. The purpose of this alternative is to split traffic between Spokane Avenue and Baker Avenue. A 7th Street bridge is not required under this alternative. Three travel lanes would be used along the corridor. A signalized intersection would be created at the intersection of Baker Avenue and 13th Street. A detailed diagram with intersection turning movements can be found on **Figure 8**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 2nd Street)**

Two northbound lanes and one southbound lane with no on-street parking allowed at this location. A bike lane would be added along Spokane Avenue.

**2nd Street (Spokane Avenue – Baker Avenue)**

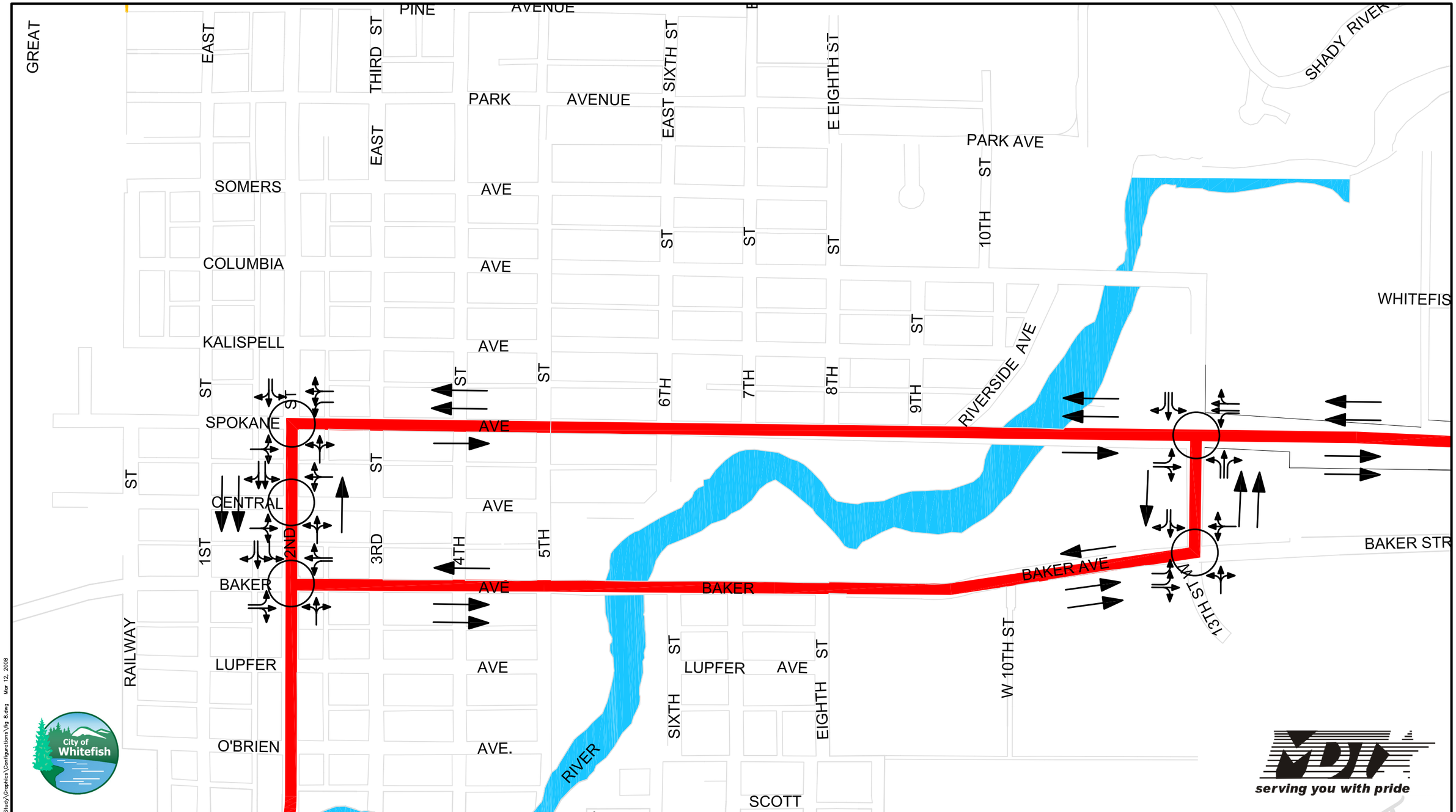
Two westbound and one eastbound lane would be provided at this location. On-street parking would be provided on one side of the street.

**Baker Avenue (2nd Street – 13th Street)**

This section would include two southbound lanes and one northbound lane. A signal would be installed at the intersection with 13th Street. The geometry would be improved along Baker Avenue with the route being signed as an alternate US 93 route. A bike lane would also be added at this location.

**13th Street (Baker Avenue – Spokane Avenue)**

Two eastbound lanes and one westbound lane would be provided at this location. A signal would be installed at the intersection with Baker Avenue.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## *ALTERNATIVE C (COUPLET 1)*

Alternative C (Couplet 1) is a design concept included with the US Highway 93 Somers to Whitefish FEIS. This option creates a one-way couplet with Spokane Avenue providing for the northbound traffic and Baker Avenue providing for the southbound traffic. The concept did not include a bridge across the Whitefish River at 7th Street to link Spokane and Baker Avenues. The FEIS showed a Baker Avenue connection north of the intersection of Spokane Avenue and 13th Street. (This connection now functions as an internal circulation roadway in an area developed with offices and commercial uses).

The FEIS also described a future southerly extension of Baker Avenue and connection at 13th Street to be constructed by the City of Whitefish. Since the FEIS, Baker Avenue has been extended to 13th Street and a signalized intersection exists at 13th Street and Spokane Avenue.

A detailed diagram with intersection turning movements can be found on **Figure 9**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 2nd Street)**

This section of Spokane Avenue would be a one-way roadway with two northbound lanes. On-street parking would be allowed and a bike lane would be added to the street.

**2nd Street (Spokane Avenue – Baker Avenue)**

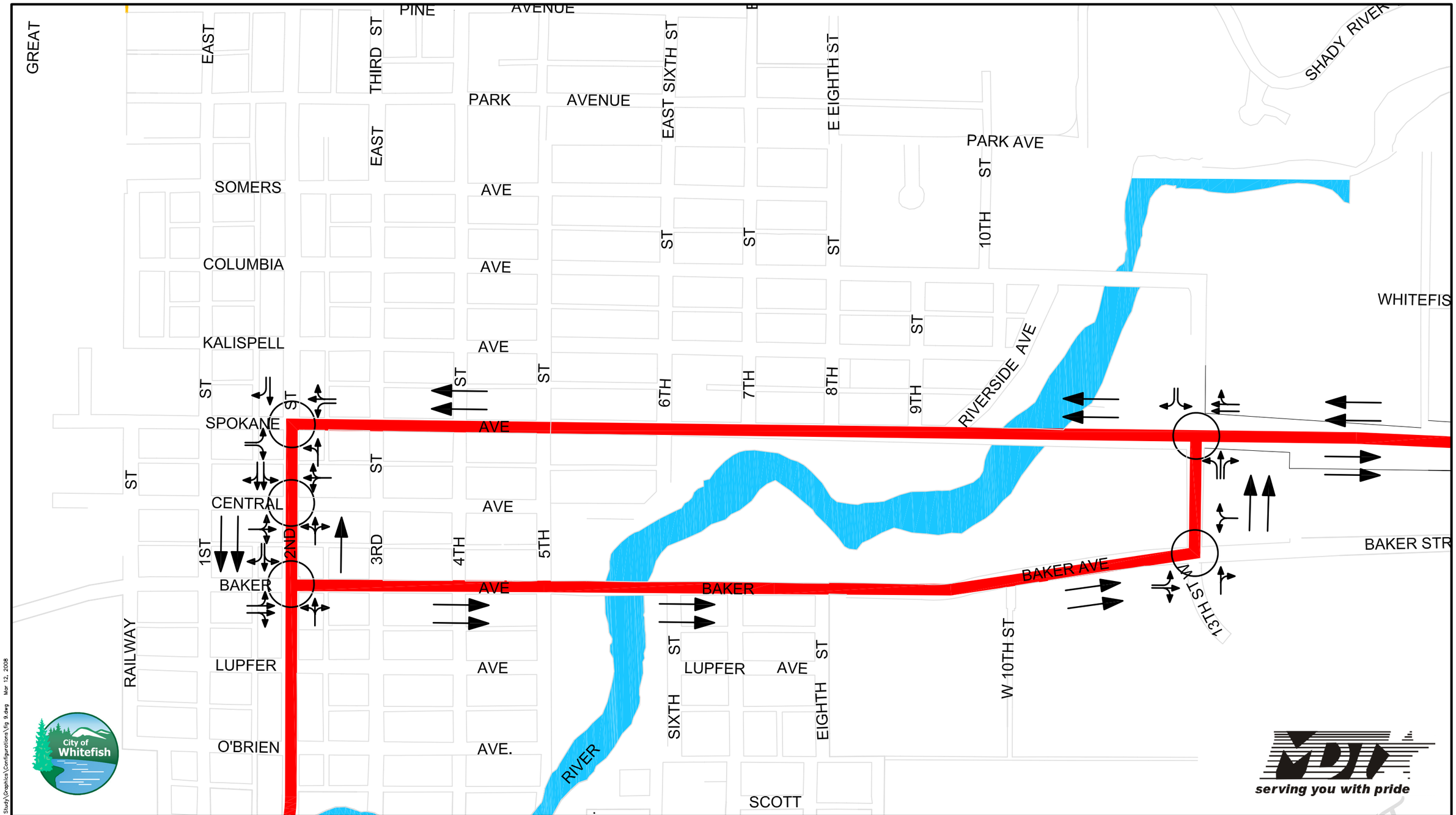
Two westbound lanes and one eastbound lane would be provided at this location. On-street parking would be allowed on the south side of 2nd Street.

**Baker Avenue (2nd Street – 13th Street)**

This section would consist of a one-way roadway with two southbound lanes. A signalized intersection would be created at the intersection with 13th Street and Baker Avenue.

**13th Street (Baker Avenue – Spokane Avenue)**

One-way traffic would be accommodated via two eastbound lanes. The intersection of Spokane Avenue and 13th Street is signalized.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ALTERNATIVE C (COUPLET 1)
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## *ALTERNATIVE C (COUPLET 2)*

Alternative C (Couplet 2) is a design concept developed in the US Highway 93 Somers to Whitefish FEIS. This option creates a one-way couplet with Spokane Avenue providing for the northbound traffic and Baker Avenue providing for the southbound traffic. A bridge across the Whitefish River connecting 7th Street to Baker Avenue and Spokane Avenue would be needed under this option. A detailed diagram with intersection turning movements can be found on **Figure 10**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 2nd Street)**

This section allows for one-way traffic along two northbound lanes with on-street parking and a bike lane being provided at this location. A signalized intersection would be created at the intersection with 7th Street.

**2nd Street (Spokane Avenue – Baker Avenue)**

Two westbound and one eastbound lane would be provided at this location. On-street parking would be provided on one side of the street.

**Baker Avenue (2nd Street – 13th Street)**

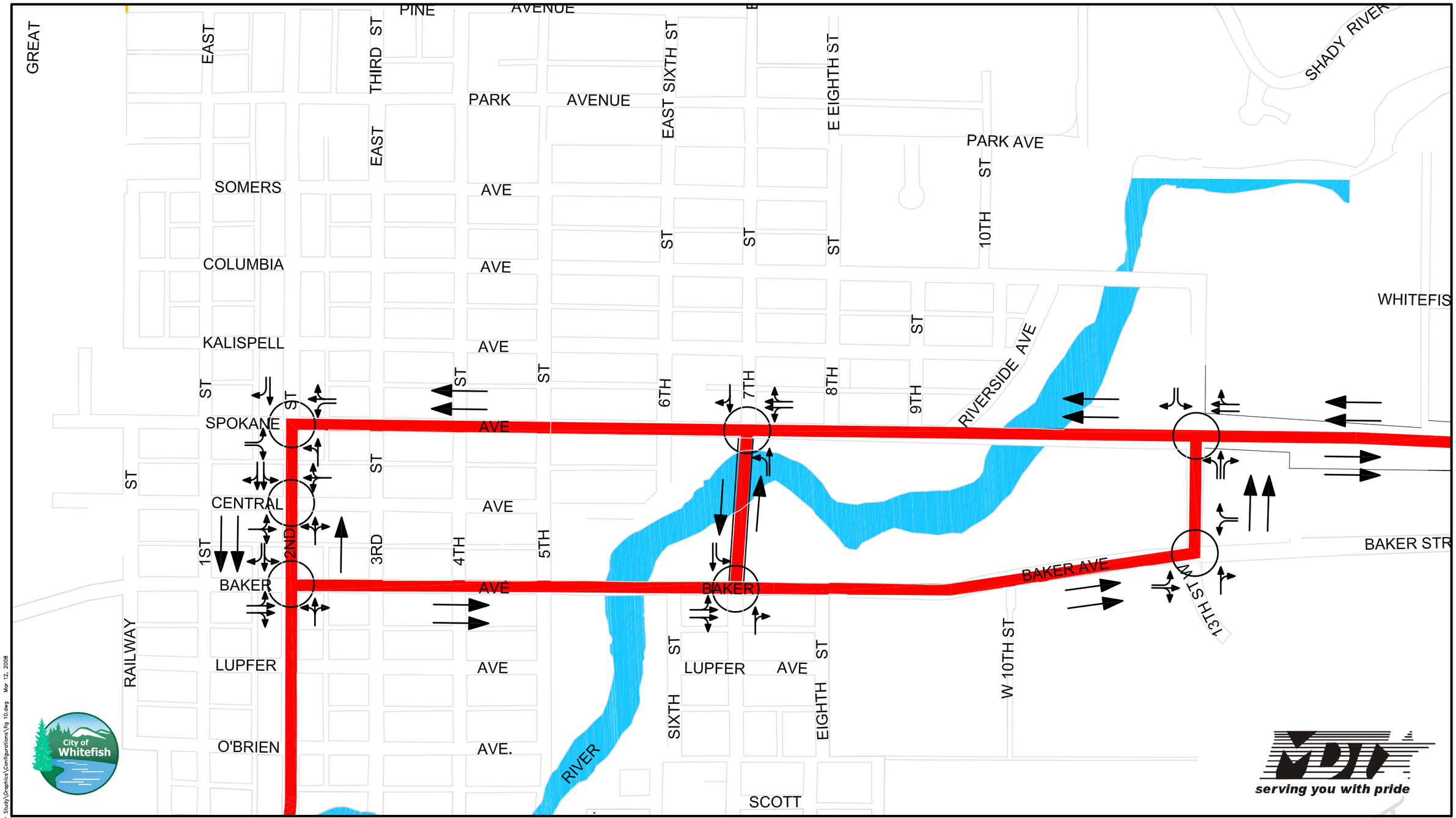
This section would include two southbound lanes with eight-foot shoulders and five-foot sidewalks on each side of the roadway. Signals would be installed at the intersections with 7th Street and 13th Street.

**7th Street (Baker Avenue – Kalispell Avenue)**

A bridge across the Whitefish River would be needed to connect Baker Avenue and Spokane Avenue. This section would accommodate one eastbound and one westbound lane. 7th Street would also be extended east to connect to Kalispell Avenue. A signal would be installed at the intersections with Baker Avenue and Spokane Avenue.

**13th Street (Baker Avenue – Spokane Avenue)**

One-way traffic would be accommodated via two eastbound lanes. A signal would be installed at the intersection with Baker Avenue.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ALTERNATIVE C (COUPLET 2)
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## *ALTERNATIVE C (COUPLET 4)*

Alternative C (Couplet 4) is a design concept taken from the US Highway 93 Somers to Whitefish FEIS. This option creates a one-way couplet with Spokane Avenue providing for the northbound traffic and Baker Avenue providing for the southbound traffic. A 7th Street bridge would not be required under this option. A detailed diagram with intersection turning movements can be found on **Figure 11**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 2nd Street)**

This section of Spokane Avenue would be a one-way roadway with two northbound lanes. On-street parking would be allowed and a bike lane would be added to the right side of the street.

**2nd Street (Spokane Avenue – Baker Avenue)**

Two westbound lanes and one eastbound lane would be provided at this location. On-street parking would be allowed on the south side of 2nd Street.

**Baker Avenue (2nd Street – 5th Street)**

This section would consist of a one-way roadway with two southbound lanes. A signalized intersection would be created at the intersection with 5th Street.

**Baker Avenue (5th Street – 8th Street)**

This section would consist of two southbound lanes and one northbound lane. Signalized intersections would be created at the intersections with 5th Street and 8th Street.

**Baker Avenue (8th Street – 13th Street)**

This section would consist of a one-way roadway with two southbound lanes. Signalized intersections would be created at the intersections with 8th Street and 13th Street.

**5th Street (Baker Avenue – Spokane Avenue)**

This section would be used as a major connection between Spokane Avenue and Baker Avenue. One lane in each direction would be provided in this area. A signalized intersection would be created at the intersection with Baker Avenue.

**13th Street (Baker Avenue – Spokane Avenue)**

One-way traffic would be accommodated via two eastbound lanes. A signal would be installed at the intersection with Baker Avenue.

GREAT
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THIRD ST
PINE
AVENUE
PARK
AVENUE
EAST SIXTH ST
E EIGHTH ST
SHADY RIVER
PARK AVE
SOMERS
AVE
EAST
ST
10TH
COLUMBIA
AVE
KALISPELL
AVE
WHITEFIS
RIVERSIDE AVE
6TH
7TH
8TH
9TH
SPOKANE
AVE
CENTRAL
AVE
1ST
2ND
3RD
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5TH
BAKER
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BAKER
BAKER AVE
BAKER STR
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RAILWAY
LUPFER
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AVE
SIXTH
EIGHTH
W 10TH ST
O'BRIEN
AVE.
RIVER
SCOTT

City of Whitefish

serving you with pride

RPA

Principal Arterial
Traffic Signal
Intersection Approach Lane Configuration

N

SCALE: 1"=500'

URBAN CORRIDOR STUDY
OF US HIGHWAY 93

Figure 11

**ALTERNATIVE C (COUPLET 4) CONFIGURATION**

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## *DOWNTOWN BUSINESS DISTRICT MASTER PLAN CONFIGURATION*

The Downtown Business District Master Plan configuration originates from the Whitefish Downtown Business District Master Plan. The intent of this option is to improve auto and truck circulation along Spokane Avenue and Baker Avenue by providing a couplet along these roadways. A 7th Street bridge across the Whitefish River would be needed under this option. A detailed diagram with intersection turning movements can be found on **Figure 12**.

Key elements of this option are described below:

**Spokane Avenue (13th Street – 7th Street)**

Two northbound lanes and two southbound lanes with no on-street parking allowed at this location. A signal would be placed at the intersection of Spokane Avenue and 7th Street.

**Spokane Avenue (7th Street – 2nd Street)**

This section of Spokane Avenue would be a one-way roadway with two northbound lanes. On-street parking would be allowed on one side of the street with a two-way bike lane being added to the other side of the street.

**2nd Street (Spokane Avenue – Baker Avenue)**

One westbound and one eastbound lane would be provided at this location. On-street parking would be allowed on 2nd Street. Curb extensions would be used at the intersection with Central Avenue to reduce pedestrian crossing distance. No left-turns would be allowed onto Central Avenue. Larger turning radii would be used to accommodate trucks at the intersections with Baker Avenue and Spokane Avenue.

**Baker Avenue (2nd Street – 7th Street)**

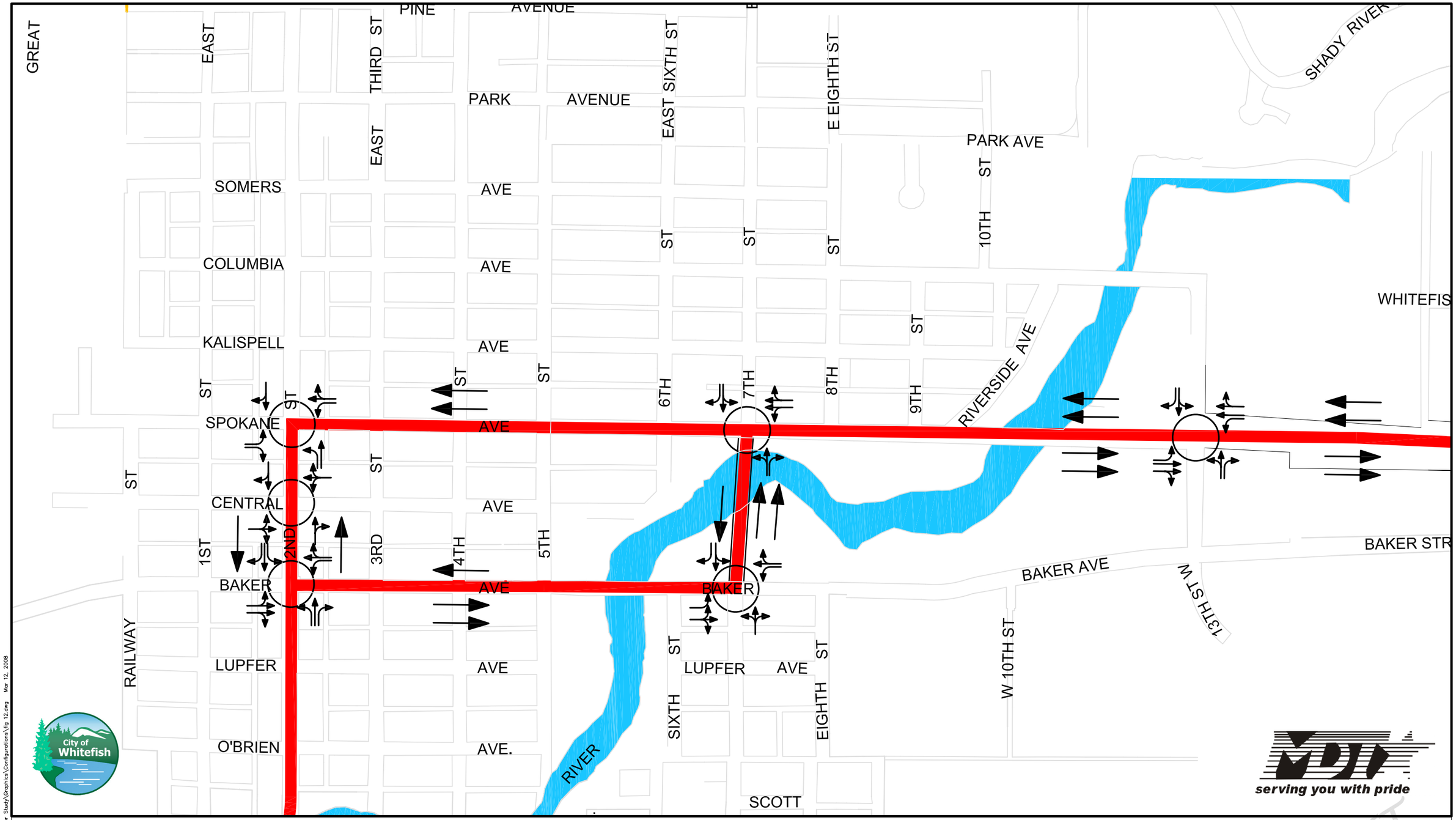
This section would consist of two southbound lanes and one northbound lane. On-street parking could be accommodated on one side of Baker Avenue. A southbound double left-turn lane would be added at the intersection with 7th Street.

**7th Street (Baker Avenue – Spokane Avenue)**

A new bridge would be constructed across the Whitefish River allowing 7th Street to connect Baker Avenue and Spokane Avenue. Two eastbound lanes and one westbound lane would be provided with signals at the intersections with Baker Avenue and Spokane Avenue.

**7th Street (Spokane Avenue – Kalispell Avenue)**

A new connection would be made along 7th Street between Spokane Avenue and Kalispell Avenue consisting of one lane in each direction.


GREAT
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COLUMBIA
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RIVERSIDE AVE
WHITEFIS
SPOKANE
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SCALE: 1"=500'
URBAN CORRIDOR STUDY
OF US HIGHWAY 93
Figure 12
DOWNTOWN MASTER PLAN
CONFIGURATION
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## *Western Route Alternates*

The US Highway 93 Somers to Whitefish FEIS/ROD identified four bypass alignments for US 93 in the Whitefish area. These options are briefly described below.

**Bypass Option A.** Bypass Option A begins at an intersection with US 93 approximately 1.7 miles south of the US 93 intersection with MT 40. Option A travels in a northwesterly direction and follows an existing dirt road for the first 1.7 miles. The alignment then proceeds north through natural drainage swales to connect back with US 93.

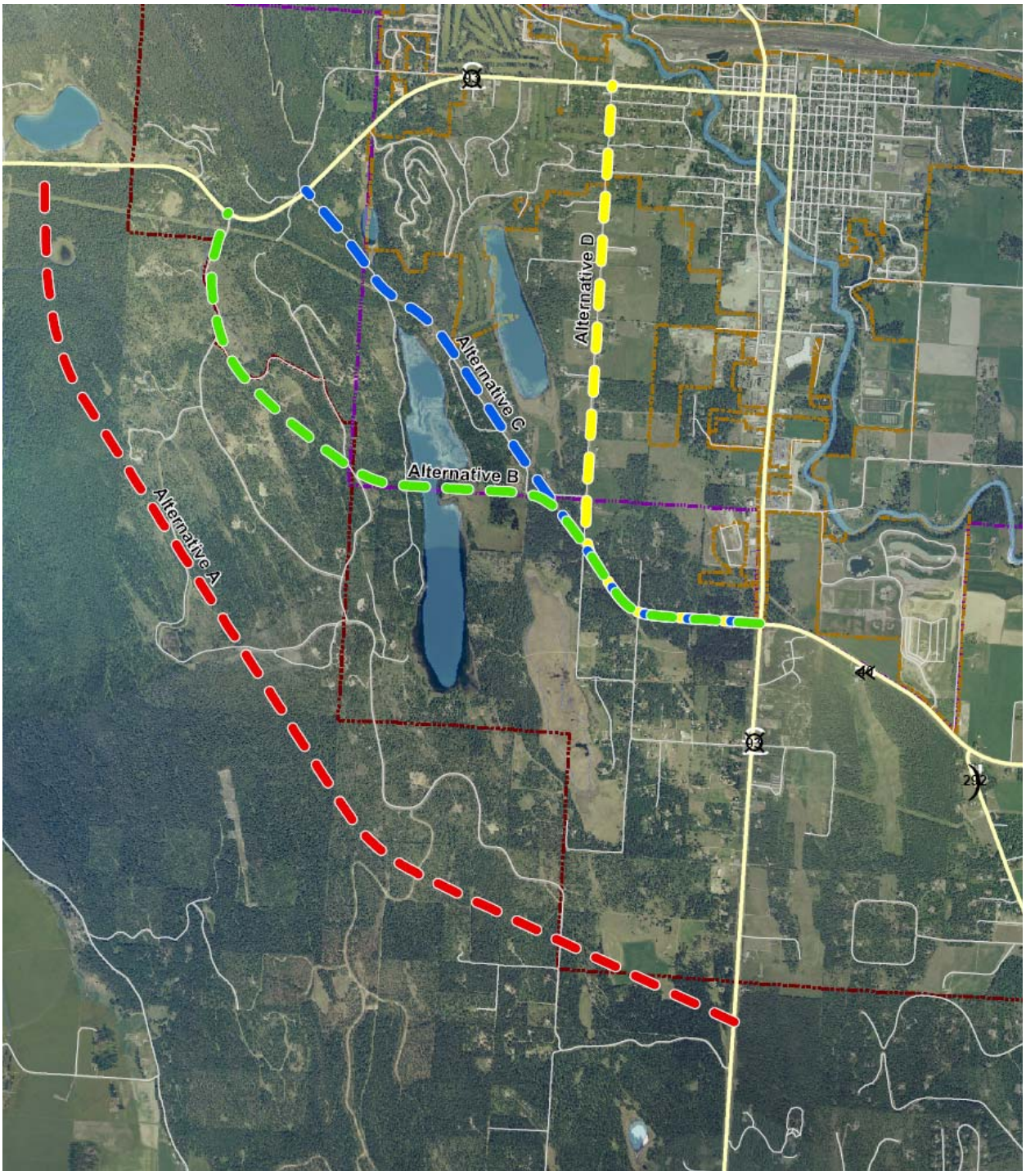
**Bypass Option B.** Bypass Option B begins at the intersection of MT 40 and US 93. The alignment would then proceed west to meet with Blanchard Lake where a bridge would be required to cross the lake. After the bridge, the alignment would head northwest to connect back with US 93.

**Bypass Option C.** Bypass Option C begins at the intersection of MT 40 and US 93. The alignment would then follow the same alignment as Alternative B for the first 1.5 miles. At this point the alignment would then follow the eastern side of Blanchard Lake along existing power lines to a point where it would meet back up with US 93.

**Bypass Option D.** Bypass Option D would begin at the intersection of MT 40 and US 93 and would follow the same alignment as Option B until it intersects with Karrow Avenue (approximately 1.4 miles). The alignment would then proceed north along Karrow Avenue to intersect with US 93.

A graphic showing the location of these western route alternatives is found on the following page.

## *Figure 13: Western Route Alternates*



## *Transportation System Management (TSM)*

Transportation System Management (TSM) projects are relatively low cost, "tune-up" type improvements designed to increase the operational efficiency and capacity of the existing street system. These strategies are typically focused on actions like modernizing or installing new traffic signals, intersection improvements (approach widening, channelization, addition of turn lanes), optimizing lane usage, removing or restricting on-street parking, and improvements to signage and lighting improvements.

Chapter 8 of the Whitefish Transportation Plan identifies several recommended TSM projects on the existing street network. Three of these projects are focused on making short-term, incremental improvements to the US 93 corridor or Baker Avenue including:

> **TSM-4 (13th Street/US Highway 93 Intersection)** – Revising lane use designations and striping to smooth traffic flows.
>
> **TSM-6 (Baker Avenue/13th Street Intersection)** - Installing a traffic signal at the intersection of Baker Avenue and 13th Street when signal warrants are met.
>
> **TSM-7 (2nd Street Traffic Signal Modifications/Coordination)** – Adding eastbound and westbound left-turn bays and designated left-turn phases to the traffic signals at the intersections of 2nd Street with Baker Avenue and Spokane Avenue.

Access management can also be considered a TSM-type improvement. The goals of access management are to improve the safety, function, and operation of the roadway, and to ultimately provide a traffic facility that better serves both local and regional users. Access management helps identify necessary access points and desirable spacing along a highway segment. An access management planning recommends measures like adding turn lanes, incorporating turning restrictions, consolidating accesses, eliminating unnecessary accesses and implementing traffic control measures to maintain the desired operational characteristics of the highway.

## *Travel Demand Management (TDM)*

TDM strategies are relatively low-cost, non-construction measures capable of reducing travel demand and improving traffic flow. These measures consist of programs or policies focused on either reducing the number of vehicles on the roadway or distributing trips to less congested periods of the day.

The Whitefish Transportation Plan recognizes that some TDM measures could be effective in helping to address commute trip issues when used in combination with road improvements; transit service improvements; bicycle and pedestrian improvements; and appropriate land use planning. Together, these actions may help to reduce travel (vehicle trips and the vehicle miles traveled) as Whitefish grows and during special events within the community. The Transportation Plan highlighted numerous TDM measures including:

- Walking and bicycling for work
- Ridesharing (carpooling and vanpooling)

- Park and ride lots
- Transit and subsidized transit
- Traffic calming
- Telecommuting
- Flexible work schedules
- Required densification strategies/mixed use developments
- Transit oriented development

## *Transit Improvements*

Transit options are strategies that rely upon the provision of new transit services or the expansion of transit services to help reduce traffic congestion.

Improving bus transit within the community is a strategy that could help address traffic congestion and future travel demands on US 93. Currently, several organizations offer limited transit services within Whitefish (like the Snow Bus to Whitefish Mountain Resort and Eagle Transit's shuttle services to other Flathead Valley communities). However, these services are currently offered only on a seasonal basis within Whitefish.

Eagle Transit does offer paratransit services throughout the year. This service is generally on-demand and focused on serving a particular population, such as people with disabilities or the elderly.

## *ITS Strategies*

Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance productivity.

ITS ensures facility users have broad access to all informational services needed to make and execute efficient travel and transport choices, both before and during trips. In general, ITS projects offer these overall benefits:

- Enhanced public safety;
- Reduced congestion;
- Improved access to transit and travel information;
- Cost savings to motor carriers, transit operators and government; and
- Reduced environmental impacts.

## *Selected Off-system Improvements Indirectly Benefiting the Corridor*

Selected changes to the supporting local road network will be initially examined for their potential benefits to the operation of US 93 through Whitefish. These "off-system" changes include projects like extending existing streets, adding new roadway links or crossings over the BNSF Railway and Whitefish River, and providing other network improvements to enhance travel within the

community. Potential off-system changes reviewed for the corridor study will include only those local projects considered desirable in the Whitefish Transportation Plan.

These off-system improvements should not be viewed as "add-on" elements of design options for the corridor. However, these improvements may enhance or support whatever design improvements are ultimately recommended for the corridor.